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RELATIONSHIP BETWEEN PERCEIVED BENEFITS AND BARRIERS TO EXERCISE AND ACTUAL EXERCISE PARTICIPATION AMONG THE WELL ELDERLY IN THE COMMUNITY

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By

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ABSTRACT

RELATIONSHIP BETWEEN PERCEIVED BENEFITS AND BARRIERS TO EXERCISE AND ACTUAL EXERCISE PARTICIPATION AMONG THE WELL ELDERLY IN THE COMMUNITY

by Diane Cave

This thesis examined the relationship between perceived benefits and barriers to exercise and actual exercise participation among the well elderly in the community. Utilizing a survey design, data were collected on the two study variables: perceived benefits/barriers to exercise and exercise participation from a convenience sample of 30 well elders in the community.

The data indicate that perceived benefits of exercise were related to exercise participation. Barriers to exercise were not statistically significantly correlated with exercise participation; however, the results suggest that the participants did not view many of the typical barrier items as a deterrent to exercise.

The findings suggest specific benefits to exercise for inclusion in assessment and discussion of an exercise program for the elderly, particularly since seniors comprise the fastest growing segment of the population. Further research is also recommended in relationship to important barriers to exercise in the well elderly.

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Chapter 1

INTRODUCTION

This study focused on perceived benefits and barriers to exercise in relation to exercise participation in a group of well elders in the community.

The American population is aging; men who are now 65 years old can expect to live 14 more years, and women who are now 65 can expect to live 18.4 more years (Walker, Volkan, Sechrist, & Pender, 1988). The elderly are experiencing an increase in life expectancy at a faster rate than the rest of the population.

As the population ages, health care providers will increasingly be challenged to meet the special needs of the elderly, including helping them adjust to losses associated with aging and retaining their functional status. A health promotion program of exercise is one way in which these goals may be attained.

Unfortunately, many health professionals do not target the elderly for health promotion strategies. "While considerable resources have been invested in this country in the medical care of older persons who are ill, relatively little attention has been given to enhancing their health or to preventing costly illness" (Walker et al., 1988). Therefore, little is reported about the practices of older

adults to protect or enhance their health.

There are several reasons why the concept of physical activity in the elderly is important for nursing.

> Since nursing's primary focus is on how a person relates to the environment, the issue of physical activity becomes an important area that is intimately associated with the person's perception of health and physical stability, and is a standard by which health maintenance and recovery from illness are measured (Collins, 1982).

Secondly, the Census Bureau predicted that the percentage of persons aged 65 or older should rise from 11.4% in 1980 to 21.7% by 2050. Of that population, a large proportion (44.3%) reported some degree of physical inactivity and disability that may have required nursing care (Vallbona & Baker, 1984). Therefore, nursing has a professional responsibility to investigate those problems of aging that are within the scope of professional nursing practice. Lastly, nursing has a professional commitment to preventive and holistic health care, which requires attention to those special aspects of health that hold promise for providing an accessible, acceptable, and appropriate means by which people may achieve and maintain their highest level of wellness.

Exercise programs may help to improve cardiovascular function, muscular strength, endurance and flexibility. Unfortunately, too few older Americans know about proper exercise and the accompanying benefits (Heckler, 1985). Yet, exercise has many potential benefits for the elderly, such as helping prevent osteoporosis and resulting fractures and orthopedic problems by slowing bone mineral loss, and helping decrease the risk of heart and blood vessel disease (Webster, 1988). Therefore, health promotion activities, particularly exercise, may help contribute to the maintenance and improvement of health of the elderly, enabling them to enjoy more satisfying lives.

Therefore, the purpose of this study was to explore the relationship between perceived benefits/barriers to exercise and actual exercise participation in the well elderly in the community.

Statement of the Problem

More and more elderly people are being seen in every health care setting. The demographic trend responsible for this change is often referred to as the "greying of America" (Webster, 1988). Webster (1988) also stated that if this trend continues, as is likely, by 2020 every fourth American will be over 65 years of age.

These demographic changes have implications for health care. The prevalence of chronic degenerative diseases as the major health problem in our country has changed the quality of the aging years. Most noninstitutionalized aged have at least one chronic condition and many suffer from multiple conditions which diminish personal independence and vitality and drain health-care resources (Webster, 1988).

One way to delay the trajectory of chronic illness is to alter health behaviors which in turn might help maximize health and effective functioning in the later years. These behaviors might delay the onset of new clinical manifestations of various chronic diseases (Ory, 1984). By incorporating exercise into their daily routine, elderly clients may be able to improve the quality of their lives and prevent some of the physical consequences of aging.

Acute-care, with the costs increasing faster than the gross national product, has stimulated consideration of illness prevention and health promotion. Strategies involving changes in lifestyle, such as adoption of a physical fitness plan, encourage individuals to assume responsibility for their own health. However, prevention and promotion constitute a largely unexplored area for the elderly (Milsum, 1986).

While much has been written about the physiological processes of aging in relation to physical activity, little research has been conducted about the relationship between physical activity and perceived benefits/barriers to exercise.

This study sought to answer the question of whether there is a relationship between perceived exercise benefits/ barriers and exercise participation. The broader goal was to increase understanding of the means by which people may achieve and maintain their highest level of health, and, therefore, remain in the community. In addition, the study may assist nurses providing interventions with important guidelines for nursing practice and education.

Hypotheses

The two hypotheses for this study were:

1. The higher the perceived benefits of exercise, the higher the reported exercise participation.

2. The higher the perceived barriers to exercise, the lower the reported exercise participation.

Research Question

The research question for this study was as follows: What is the relationship between perceived benefits/barriers to exercise and actual participation of exercise in regard to the well elderly in the community?

Purpose

The purpose of this study was to determine the relationship between exercise benefits and barriers, and exercise participation among the aging. Specifically, this study was designed to determine whether perceived benefits and barriers to exercise are related to actual participation in exercise of the well elderly.

Research Design

This correlational study used a survey methodology in order to assess perceptions of exercise benefits and barriers and exercise participation in a convenience sample of well elders in the community.

The setting for this study was a senior community center in northern California. The convenience sample group consisted of 30 well elders from a senior center.

The Exercise Benefits/Barriers Scale and the exercise subscale of the Health Promoting Lifestyle Profile was used to collect data on the two study variables: perceived benefits/barriers to exercise and participation in exercise.

The Exercise Benefits/Barriers Scale is a 43-item instrument designed to determine the perceptions of individuals concerning the benefits of and barriers to participation in exercise.

The Health Promoting Lifestyle Profile consists of 48 questions; however, only those questions dealing with the exercise component were used--items 4, 13, 22, 30, and 38.

Anonymity was preserved by assigning numbers in place of names to the questionnaires. Each participant gave written permission prior to the distribution of the questionnaires. The questionnaires, including a demographic data sheet, was distributed and collected by the researcher at the senior center.

Data analyses included descriptive statistics and the Pearson Product Moment Correlation. Pearson's r was computed to estimate the relationship between perceived benefits and barriers to exercise and exercise participation.

Scope and Limitations

The subjects were taken from a fairly small sample population from northern California. Since the older adults comprise a convenience sample, they may be more motivated to participate in exercise than a random sampling. Also, due to the correlational design of the study, a causal relationship between the variables cannot be determined because of the lack of manipulation, control, and randomization.

Chapter 2

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

Conceptual Framework

Pender's (1987) Health Promotion Model provides the conceptual framework for this study. Pender's work includes health-promoting behaviors, which the author views as an expression of the human actualizing tendency. Health-promoting behavior is directed toward maintaining or improving the individual's level of well-being, personal fulfillment, and self-actualization, and away from reaction to a threat of illness. The determinants of health promoting behaviors are categorized into cognitive-perceptual factors, which exert a direct influence on the likelihood of engaging in health and promoting actions and modifying factors. Examples of behaviors that persons may engage in for the promotion of health include physical exercise, nutritional eating practices, development of social support, and use of relaxation or stress management techniques. "Health promotion consists of activities directed toward increasing the level of well being and actualizing the health potential of individuals, families, communities, and society" (Pender, 1987).

The Health Promotion Model is based on the Health Belief Model that utilized social learning theory. The

Health Promotion Model is structurally similar to the Health Belief Model in that it uses cognitive-perceptual factors, modifying factors, and variables affecting the likelihood of action.

The Health Belief Model (Pender, 1987) was developed in the early 1950's to explore why some people who are well take actions to avoid illness, while others fail to take protective actions. The model was seen as potentially useful to predict those individuals who would or would not use preventive measures and to suggest interventions that might influence predisposition of resistent individuals to engage in preventive or health-protecting behaviors. However, the model lacked consistent measurement of variables across multiple studies, and it did not propose relationships among variables; therefore, findings were inconsistent when results were compared across multiple studies. The Health Belief Model is directed toward decreasing the likelihood of experiencing illness, whereas he Health Promotion Model is directed toward increasing the level of well-being and self-actualization of an individual or group.

The Health Promotion Model identified cognitive-perceptual factors which include importance of health, perceived control of health, perceived health status,

perceived self-efficacy, definition of health, perceived benefits of health promotion, and perceived barriers to health promoting behaviors as those factors directly affecting the likelihood to engage in health-promoting behaviors. Modifying factors include demographic, interpersonal, biological, and situational variables, which affect people's dispositions to health-promoting behavior such as age, race, sex, ethnicity, education, income, and occupation. Variables affecting the likelihood of action and modifying factors are those factors that are seen as indirectly influencing the pattern of health behaviors.

Pender's (1987) Health Promotion Model is helpful in developing goals for health promotion in the community. The concept of lifestyle change emphasizes the notion that in promoting health, people should be the initiator of, or at least a willing participant in the process of change as they move toward more self-responsibility and self-care. This ensures that people retain ultimate choice of and control over their lifestyles (Alexy, 1985).

Review of the Literature

The literature has reported that exercise has important implications for longevity and susceptibility to disease (Collins, 1982). Brunner (1970) observed that a lifestyle that includes physical activity as an important component

might result in a reduction in the decline of health and function, as well as other components of decline that accompany aging.

Webster (1988) reported that exercise facilitates physiological improvements in the elderly. Exercise helps to increase strength, flexibility, and mobility, and decrease body weight and the percentage of body fat. The author also reported several psychosocial benefits of exercise: increased sense of well-being, increased life satisfaction, improved self concept, decreased anxiety, and depression. A study by Sullivan (1987) confirmed that maintenance of the muscular system through exercise can provide the aging person with continued independence and a positive self-concept by minimizing the debilitating effects of disuse and impaired mobility. Likewise, exercise increases physical capacity at any age, helps minimize the number and severity of acute problems, reduces debilitation caused by acute or chronic illness and maintains a sense of well-being (Johnson-Pawlson & Koshes, 1985).

Cameron (1986) stated that risks to good health are not only related to heredity and environment, but also to personal behaviors and lifestyles. In order to improve the health and quality of life for older adults, the author recommended people stop smoking, improve nutrition and

implement an exercise program, as well as control stress. This study, which used Pender's lifestyle and health habits inventory and health promotion plan, concluded that a health promotion program for the well elderly in a community center was a way to reduce risks for heart disease and motivate people to adopt healthy lifestyles by learning to set goals.

Walker, Volkan, Sechrist and Pender (1988) compared health promoting behaviors of older adults with those of young and middle-aged adults. They found that older adults had higher scores in overall health-promoting lifestyles than both young and middle-aged adults. However, scores for all three age groups were lowest in the exercise component of health-promoting lifestyle. The authors suggested "a need for nurses to place a high priority on increasing the participation of all adults in regular physical activity throughout their lives" (p. 87).

A research study by Pender and Pender (1986) indicated that attitudes, subjective norms, and weight affect intention to engage in regular exercise in adults aged 18-66. The group intending to exercise regularly had significantly more positive attitudes toward exercise than those not intending to engage in physical fitness activities.

In a study which examined intention to participate in health promotion programs after retirement, Godin, Beamish, Wipper, Shephard and Colantinio (1988) found that older members of the community, particularly women, were more prone to have positive intentions toward exercise. However, one barrier to exercise participation in this study was the distance to the exercise facility.

Gillett (1988) identified eight factors that seemed to influence exercise adherence in 38 overweight women who participated in a 16 week dance exercise program. Two of the factors identified were pleasurable feelings associated with increased energy and fitness and the desire to change health status and improve physical health.

The literature review reflects the importance of the physiological and psychosocial implications associated with aging and how these changes can affect participation in exercise, benefits and barriers to exercise, and health promoting behaviors. Specifically, the research indicates that physical activity has generally been approached from a physiological perspective, such as flexibility, strength and endurance, instead of using a Health Promotion Model which emphasizes wellness and cognitive/perceptual variables. Given this information, the issue of physical activity and the perceived benefits/barriers to exercise relative to

aging warrant further investigation.

Chapter 3

METHODOLOGY

Research Design

This correlational, cross-sectional study used a survey methodology in order to measure exercise participation and perceptions of exercise benefits and barriers. The purpose of this study was to estimate the relationship between the independent variable, benefits/barriers of exercise, and the dependent variable, exercise.

Sample and Setting

The convenience sample consisted of 30 well elders from a community senior center in northern California. Most of the sample were Caucasian females, in part, due to the location of the senior center, which was located in a more affluent section of the county. The approximate age range of the volunteers was 60-80. The senior center offered a multitude of community services such as housing assistance, financial consultation, and peer counseling. It had facilities for hobbies, crafts, and various classes; it offered trips and tours each month and had a well elder center and full-service dining room.

Data Collection Method

Permission to conduct the study was obtained from the community senior center in the county (Appendix A) and from

the San Jose State University Institutional Review Board--Human Subjects. Volunteers were asked to participate in the study. The participants were given the questionnaires, along with a consent form. The subjects were informed that participation was voluntary and that confidentiality of the results was assured. The subjects who consented to participate in the study completed the Health Promoting Lifestyle Profile, the Exercise Benefits/Barriers Scale, and a demographic data sheet. The researcher was present during the distribution, completion, and collection of the questionnaires to answer any questions the participants had.

Measurement

Questionnaires were used to obtain all data. The subject's perceived benefits and barriers to exercise were measured by the Exercise Benefits/Barriers Scale, and the exercise participation was measured by the Health Promotion Lifestyle Profile. A demographic data sheet (Appendix B) developed by the investigator was used to develop a profile of the sample.

The dependent variable, exercise, was measured by the exercise subscale of the Health Promoting Lifestyle Profile. The profile consisted of 48 questions designed to measure an individual's current practice of behaviors that serve to maintain or increase levels of wellness, self-actualization,

and fulfillment (Walker, Sechrist & Pender, 1987). The instrument (Appendix B) is composed of 6 subscales; however, for this study, only the data from the exercise subscale were used. The exercise subscale consists of items concerned with regular exercise patterns. The questions are stated as statements and have four-response Likert-type choice answers from strongly agree (4) to strongly disagree (1). The score for the exercise variable was computed by adding the responses to the exercise items, 4, 13, 22, 30, and 38. Reliability had been established with an internal consistency alpha coefficient for the total scale of .922 (Walker, Sechrist, & Pender, 1987).

The independent variable, benefits/barriers to exercise, was measured by the Exercise Benefits/Barriers Scale, which was developed in response to a need for an instrument to determine the perceptions of individuals concerning the benefits of and barriers to participation in exercise (Sechrist, Walker, & Pender, 1987) (Appendix C). The 43-item instrument has four-response Likert-type choice answers from strongly agree to strongly disagree.

Benefits items are scored from strongly agree (4) to strongly disagree (1). Barriers items are reverse-scored. Barrier items are 4, 6, 9, 12, 14, 16, 19, 21, 24, 28, 33, 37, 40, and 42. Factor analysis provided validity for the

instrument measuring two distinct phenomena, perceived benefits of exercise and perceived barriers to exercise. Reliability coefficients were .95 for the benefits scale and .87 for the barriers scale. Test-retest reliability was found to be .89 on the total instrument, .89 on the benefits scale, and .77 on the barriers scale (Sechrist, Walker, & Pender, 1987). Permission to use the Health Promoting Lifestyle Profile and the Exercise Benefits/Barriers Scale was obtained from the authors, Susan Walker, Ed.D. and Karen Sechrist, Ph.D., respectively (Appendix A).

Data Analysis

The collected data were analyzed by descriptive statistics and by Pearson's Product Moment Correlation. Descriptive statistics, means, standard deviations, and ranges were used to develop a profile of the sample using demographic data. Pearson's Product Moment Correlation was used to estimate the relationship between the independent variable, perceived benefits/barriers to exercise, and the dependent variable, reported exercise participation.

Chapter 4

DATA ANALYSES AND INTERPRETATION

This chapter summarizes the data collected from the survey of well elders in a community center setting. The results of this study are divided into the following sections: demographics, benefits/barriers to exercise, exercise, and benefits/barriers to exercise and exercise correlations.

Demographics

Demographic data included participant's age, gender, marital status, ethnicity, education, and income. A total of 30 elders participated in the study; however, only 29 questionnaires were usable due to missing data on the remaining questionnaire.

Among the 29 participants at the community center, 14 were involved in an exercise class, and 15 were involved in other classes such as, arts and crafts, bridge, computer, jewelry making, and reading. Of the 29 subjects, most were between the ages of 70-80 years (44.8%) as shown in Table 1. Table 2 shows that 25 (86.2%) of the volunteers were female. Fourteen of the older adults (48.3%) were widowed; however, Table 3 shows 34.5% were currently married. There was little diversity in ethnic background; Table 4 shows 93.1%

were Caucasian. Table 5 shows the largest number (11= 37.9%) of participants had some college education. Table 6 shows a wide diversity of income, with the largest number of participants making between $35,000-$40,000 per year (6= 20.7%) .

Table 1

Sample Age (N=29)

Age	Frequency	Percent
60-69	10	34.5
70-79	13	44.8
80-89	6	20.7
Total	29	100.0

Table 2

Sample Gender (N=29)

Gender	Frequency	Percent
Male	4	13.8
Female	25	86.2
Total	29	100.0

Table 3

Marital Status (N=29)

Marital Status	Frequency	Percent
Married	10	34.5
Never Married	2	6.9
Widowed	14	48.3
Divorced	3	10.3
Total	29	100.0

Table 4

Ethnicity (N=29)

Ethnic Group	Frequency	Percent
Caucasian	27	93.1
Hispanic	1	3.4
Asian	1	3.4
Total	29	100.0

Table 5

Sample Educational Level (N=29)

Education	Frequency	Percent
College Graduate	9	31.0
Some College	11	37.9
High School Graduate	7	24.1
Some High School	2	6.9
Total	29	100.0

Table 6

Sample Income (N=29)

Income	Frequency	Percent
$50,000+	3	10.3
$45,000-50,000	1	3.4
$40,000-45,000	2	6.9
$35,000-40,000	6	20.7
$30,000-35,000	4	13.8
$25,000-30,000	5	17.2
$20,000-25,000	4	13.8
$ < 20,000	4	13.8
Total	29	100.0

Benefits/Barriers to Exercise

The Exercise Benefits/Barriers Scale yielded scores on two subscales (Pender, 1987). These subscales measured the variables of benefits and barriers to exercise.

Benefits to Exercise

In Table 7, benefits to exercise values were given. The mean score on the benefit subscale was 87.5 out of a possible 114 with a standard deviation of 10.8 and a range of 46-114. The median score was 87.

Barriers to Exercise

In Table 7, barriers to exercise values were given. The mean score on the barrier subscale was 27.9 out of a possible 39 with a standard deviation of 4.6 and a range of 15-39. The median score was 28.

Total Benefits/Barriers Score

Table 7 shows that the mean score on the Benefits/Barriers Scale was 127.5 out of a possible 148 with a standard deviation of 13.4 and a range of 77-148. The median was 126.

Table 7

Benefits/Barriers to Exercise (N=29)

Subscale	Mean	Median	Standard Deviation	Range
Benefits	87.5	87.0	10.8	46-114
Barriers	27.9	28.0	4.6	15-39
Benefits/Barriers	127.5	126.0	13.4	77-148

Exercise

Exercise was measured using the exercise subscale of the Health Promoting Lifestyle Profile (HPLP) (Walker et al., 1987) and two additional items added for this study.

Exercise Subscale

Table 8 shows the mean score on the exercise subscale was 15.3 out of a possible 20 with a standard deviation of 4.5 and a range of 6-20. The median was 15.5.

Table 8

Exercise Subscale of HPLP

Subscale	Mean	Median	Standard Deviation	Range
Exercise	15.3	15.5	4.5	6-20

Stretching Exercise, Statement 4

Table 9 shows responses to statement 4 of the exercise subscale of the HPLP, frequency of stretching exercises. Nineteen of the participants (65.5%) report that they routinely participate in stretching exercises, while only 1 (3.4%) reported never participating in stretching exercises.

Table 9

Stretching Exercises, 3 Times/Week (N=29)

Value	Frequency	Percent
Never	1	3.4
Sometimes	6	20.7
Often	3	10.3
Routinely	19	65.5
Total	29	100.0

Vigorous Exercise, Statement 13

Table 10 shows the responses to statement 13 of the exercise subscale, frequency of vigorous exercise for 20-30 minutes at least three times per week. Seventeen of the participants (58.6%) report that they perform vigorous exercise for 20-30 minutes at least three times per week, while only three (10.3%) report that they never perform vigorous exercise.

Table 10

Vigorous Exercise for 20-30 Minutes, 3 Times/Week (N=29)

Value	Frequency	Percent
Never	3	10.3
Sometimes	6	20.7
Often	3	10.3
Routinely	17	58.6
Total	29	100.0

Supervised Exercise Programs, Statement 22

Table 11 shows the response to the item regarding frequency of supervised exercise programs or activities. Sixteen of the respondents (55.2%) report that they routinely participate in supervised exercise programs, while 8 (27.6%) report that they never participate in supervised exercise programs.

Table 11

Supervised Exercise Programs Participation (N=29)

Value	Frequency	Percent
Never	8	27.6
Sometimes	2	6.9
Often	3	10.3
Routinely	16	55.2
Total	29	100.0

Pulse rate check, Statement 30

Table 12 shows the responses to the item regarding frequency of pulse rate check. Fifteen of the participants (51.7%) report that they routinely check their pulse rate, while 9 (31.0%) never check their pulse rate.

Table 12

Pulse Rate Check (N=29)

Value	Frequency	Percent
Never	9	31.0
Sometimes	4	13.8
Often	1	3.4
Routinely	15	51.7
Total	29	100.0

Recreational Exercise, Statement 38

Table 13 shows the responses to the frequency for engaging in recreational physical activities. Thirteen (44.8%) of the respondents report that they routinely engage in recreational physical activities.

Table 13

Recreational Physical Activities (N=29)

Value	Frequency	Percent
Never	0	0.0
Sometimes	10	34.5
Often	6	20.7
Routinely	13	44.8
Total	29	100.0

Among the 29 subjects, only four or 13.8% indicated they did not exercise regularly, as shown in Table 14. Of the 25 participants who indicated that they exercised regularly, the highest frequency was three times per week, as shown in Table 15.

Table 14

Exercise Regularly (N=29)

Exercise Regularly	Frequency	Percent
Yes	25	86.2
No	4	13.8
Total	29	100.0

Table 15

Frequency of Exercise (N=29)

Times/Week	Frequency	Percent
2	4	13.8
3	12	41.4
4	1	3.4
5	2	6.9
7	5	17.2
Not Applicable	4	13.8
Missing Data	1	3.4
Total	29	100.0

Benefits/Barriers to Exercise and Exercise Correlations

In Table 16, the correlation coefficients between benefits/barriers to exercise and exercise participation are given.

Table 16

Correlations Between Exercise and Benefits/Barriers (N=29)

Measure	Benefits/ Barriers	Benefits	Barriers
Exercise Subscale of Lifestyle Profile	r= .50	r= .48	r= -.22
	p= .003*	p= .004*	p= .128

The benefits/barriers to exercise scale was positively correlated with exercise at a statistically significant level (p=.003). That is, the higher the perceived benefits/barriers to exercise, the higher the reported exercise participation. For further analysis, the barrier and benefit items were separated and each correlated with the exercise subscale score.

Benefits to exercise items were positively correlated with exercise at a statistically significant level (p=.004). So, the higher the perceived benefits of exercise, the higher the reported exercise.

Barriers to exercise items were negatively correlated with exercise and were not statistically significant, as shown in Table 16. Therefore, for further analysis, barrier items were listed in the following tables to show frequency and percentage of responses to each item.

Exercise Takes Too Much Time, Statement 4

Table 17 shows the response to statement 4 of the barrier item, exercise taking too much of the respondent's time. Twenty-two of the participants disagree or strongly disagree, whereas only 7 agree or strongly agree that exercise takes too much of their time.

Table 17

Exercise Takes Too Much Time, (N=29)

Value	Frequency	Percent
Strongly Agree	3	10.3
Agree	4	13.8
Disagree	19	65.5
Strongly Disagree	3	10.3
Total	29	100.0

Exercise Tires Me, Statement 6

Table 18 shows the response to statement 6 of the barrier item, exercise tires me. Seventeen of the respondents disagree or strongly disagree that exercise tires them, while only 12 agree or strongly agree.

Table 18

Exercise Tires Me, (N=29)

Value	Frequency	Percent
Strongly Agree	1	3.4
Agree	11	37.9
Disagree	15	51.7
Strongly Disagree	2	6.9
Total	29	100.0

Places to Exercise Are Too Far Away, Statement 9

Table 19 shows the response to statement 9 of the barrier scale, places to exercise being too far away. Twenty-six of the respondents disagree or strongly disagree, while 3 of the participants agree or strongly agree that places to exercise are too far away.

Table 19

Places to Exercise Are Too Far Away (N=29)

Value	Frequency	Percent
Strongly Agree	0	0.0
Agree	3	10.3
Disagree	21	72.4
Strongly Disagree	5	17.2
Total	29	100.0

Embarrassed To Exercise, Statement 12

Table 20 shows the responses to embarrassment to exercise. All of the respondents disagree or strongly disagree that they are embarrassed to exercise.

Table 20

I Am Too Embarrassed to Exercise, (N=29)

Value	Frequency	Percent
Strongly Agree	0	0.0
Agree	0	0.0
Disagree	20	69.0
Strongly Disagree	9	31.0
Total	29	100.0

Costs Too Much Money To Exercise, Statement 14

Table 21 shows the responses to statement 14, exercise costs too much money. Twenty-six of the participants disagree or strongly disagree that it costs too much money to exercise, whereas only 3 respondents agree or strongly agree.

Table 21

Costs Too Much Money To Exercise, (N=29)

Value	Frequency	Percent
Strongly Agree	1	3.4
Agree	2	6.9
Disagree	16	55.2
Strongly Disagree	10	34.5
Total	29	100.0

Exercise Facilities Do Not Have Convenient Schedules, Statement 16

Table 22 shows the responses to statement 16, exercise facilities do not have convenient schedules. Twenty-four of the respondents disagree or strongly disagree, while only 5 respondents agree or strongly agree that exercise facilities do not have convenient schedules.

Table 22

Exercise Facilities Do Not Have Convenient Schedules, (N=29)

Value	Frequency	Percent
Strongly Agree	1	3.4
Agree	4	13.8
Disagree	21	72.4
Strongly Disagree	3	10.3
Total	29	100.0

Fatigued By Exercise, Statement 19

Table 23 shows the responses to statement 19, fatigued by exercise. Twenty of the respondents disagree or strongly disagree they are fatigued by exercise, while 9 of the respondents agree or strongly agree.

Table 23

Fatigued By Exercise (N=29)

Value	Frequency	Percent
Strongly Agree	1	3.4
Agree	8	27.6
Disagree	19	65.5
Strongly Disagree	1	3.4
Total	29	100.0

Significant Other Does Not Encourage Exercise, Statement 21

Table 24 shows the responses to statement 21, significant other does not encourage exercise. Fifteen participants report that they disagree or strongly disagree that their significant other does not encourage exercise; however, 11 participants did not respond to the statement.

Table 24

Significant Other Does Not Encourage Exercise (N=29)

Value	Frequency	Percent
Strongly Agree	2	6.9
Agree	1	3.4
Disagree	13	44.8
Strongly Disagree	2	6.9
Missing	11	37.9
Total	29	100.0

Exercise Takes Time From Family, Statement 24

Table 25 shows the responses to statement 24, exercise takes too much time from family relationships. Twenty-eight respondents report they disagree or strongly disagree that exercise takes too much time from family relationships.

Table 25

Exercise Takes Time From Family, (N=29)

Value	Frequency	Percent
Strongly Agree	0	0.0
Agree	0	0.0
Disagree	23	79.3
Strongly Disagree	5	17.2
Missing	1	3.4
Total	29	100.0

People In Exercise Clothes Look Funny, Statement 28

Table 26 shows the responses to statement 28, people in exercise clothes look funny. Nineteen of the participants disagree or strongly disagree that people in exercise clothes look funny, while 10 participants agree or strongly agree.

Table 26

Value	Frequency	Percent
Strongly Agree	2	6.9
Agree	8	27.6
Disagree	13	44.8
Strongly Disagree	6	20.7
Total	29	100.0

Family Does Not Encourage Me To Exercise, Statement 33

Table 27 shows the responses to statement 33, family members do not encourage participant to exercise. Twenty-seven participants disagree or strongly disagree, whereas 2 respondents agree or strongly agree that family members do not encourage them to exercise.

Table 27

Value	Frequency	Percent
Strongly Agree	1	3.4
Agree	1	3.4
Disagree	23	79.3
Strongly Disagree	4	13.8
Total	29	100.0

Exercise Takes Too Much Time From Family, Statement 37

Table 28 shows the responses to statement 37, exercise takes too much time from family responsibilities. Twenty-seven respondents disagree or strongly disagree, while 2 respondents agree that exercise takes too much time from family responsibilities.

Table 28

Value	Frequency	Percent
Strongly Agree	0	0.0
Agree	2	6.9
Disagree	25	86.2
Strongly Disagree	2	6.9
Total	29	100.0

Exercise Is Hard Work, Statement 40

Table 29 shows the responses to statement 40, exercise is hard work. Nineteen respondents disagree or strongly disagree, while 10 respondents agree or strongly agree exercise is hard work.

Table 29

Value	Frequency	Percent
Strongly Agree	1	3.4
Agree	9	31.0
Disagree	17	58.6
Strongly Disagree	2	6.9
Total	29	100.0

Too Few Places To Exercise, Statement 42

Table 30 shows the responses to statement 42, there are too few places to exercise. Twenty-eight participants disagree or strongly disagree, while 1 participant agreed that there are too few places to exercise.

Table 30

Value	Frequency	Percent
Strongly Agree	0	0.0
Agree	1	3.4
Disagree	24	82.8
Strongly Disagree	4	13.8
Total	29	100.0

In summary, a small sample of older adults at a community center reported benefits and barriers of exercise and exercise participation scores on two questionnaires. Results suggest that when scored together, benefits and barriers of exercise are significantly postively correlated with exercise; however, when scored separately, benefits of exercise are significantly postively correlated with exercise, while barriers to exercise are negatively correlated with exercise. Although the correlation of

barriers with exercise did not reach statistical significance, the results suggest that the participants did not view many of the barrier items as a deterrent to exercise.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the relationship between the perceived benefits and barriers to exercise and actual exercise participation among the well elderly. The research question was: What is the relationship between perceived benefits and barriers to exercise and actual participation in exercise among the well elderly in the community.

This study found that perceived benefits of exercise were related to exercise participation. There was a statistically significant positive correlation between perceived benefits of exercise and exercise participation (r=.48, p=.004). Barriers to exercise were not statistically significantly correlated with exercise participation (r=-.22, p=.128). In fact, participants did not report that barriers to exercise were a consistent deterrent to exercise. Therefore, findings related to perceived benefits of exercise supported the first hypothesis: the higher the perceived benefits of exercise, the higher the reported exercise participation. On the other hand, findings related to perceived barriers to

exercise did not support the second hypothesis: the higher the perceived barriers to exercise, the lower the reported exercise participation.

Recommendations

This study's findings have important implications for nurses working with the elderly, gerontologists, health educators, and senior center personnel. Understanding an individual's perceived benefits and barriers to exercise is helpful to the person who wants to promote health and wellness since every individual has a different perception of what constitutes benefits and barriers to exercise. The study's findings are particularly important since seniors comprise the fastest growing segment of the population, with a projected increase from 31.6 million in 1990 to 34.9 million by 2000, an increase of 9.5% (U.S. Bureau of the Census, 1990). Exercise is a principal strategy to reduce morbidity and maintain physical and mental health among elderly, so data which inform and strengthen exercise programs are particularly useful.

Many exercise programs only include the importance of exercise, how to exercise, and recommended frequency of exercise. However, this study suggests that one's perception of benefits is associated with exercise participation. Therefore, an important component of any

exercise program would be an assessment of and discussion of potential benefits. These might include:

(1) Stress reduction.

(2) Increased strength.

(3) Increased endurance.

(4) Weight control.

(5) Increased range of joint motion.

(6) Increased flexibility, thus, helping to offset the debilitating effects of arthritis.

(7) Decreased bone mineral depletion, thus, helping to offset the effects of osteoporosis.

The study suggests that seniors may not perceive barriers to exercise in the same way that younger individuals do. The correlations between barrier items and exercise which were significant in one study (Sechrist, Walker, & Pender, 1987) did not reach significance in this study. An item by item analysis identified several barriers which apparently do not deter most of the seniors in this sample from exercise:

(1) Lack of time.

(2) Distance to exercise site.

(3) Embarrassment of exercise/exercise clothes.

(4) Cost of exercise.

(5) Exercise facility schedules or unavailability.

(6) Exercise fatigue and effort.

(7) No encouragement by significant other/family.

(8) Family responsibilities.

These findings suggest that the instrument may be more appropriate for working and younger subjects. However, perceived barriers are an important part of an exercise program. Further research is indicated to identify the most important or frequent barriers for this well elderly population.

A recommendation for further study is to replicate the study using a different population and a different setting. A larger sample may yield different results. Further studies on perceived benefits and barriers to exercise and exercise participation might also include additional variables such as motivation, locus of control, and a definition of health.

The Health Promotion Model seems to identify relevant variables which are associated with exercise. This study's findings suggest that at least one part of the model (perceived benefits of exercise) may inform health care workers and strengthen the exercise component of health promotion programs. If a health promotion program is aimed at promoting the benefits of exercise and decreasing the barriers to exercise, perhaps more older adults would

participate in exercise programs.

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APPENDIX A

Consent Letters

March 30, 1990

Dear Sir:

I am a graduate student completing a Master of Science Degree in Nursing at San Jose State University. A research component including a thesis is required for the degree.

The objective of my thesis is to determine a relationship between perceived benefits and barriers to exercise and actual exercise participation among the well elderly in the community. The data collection involves completing two questionnaires. Anonymity of the participants will be protected; confidentiality will be maintained by a coding system. In addition, the proposal is required to be screened by the San Jose State University Committee for the Protection of Human Subjects.

I have been advised that your approval is needed to conduct the research. If additional information is needed, I will be happy to supply it on your request.

Thank you for your assistance.

Diane Cave
5964 Shawcroft Dr.
San Jose, CA. 95123

Permission granted to gather data by way of questionnaires.

[signature] Date March 30, 1990

Northern Illinois University
DeKalb, Illinois 60115-2854

Health Promotion Research Program
Social Science Research Institute
Ambulatory Cancer Clients Project
Cardiac Rehabilitation Project
Corporate Project
Older Adults Project
(815) 753-9670

November 14, 1989

Diane Cave
5964 Shawcroft Dr.
San Jose, CA 95123

Dear Ms. Cave:

Thank you for sending the abstract of your proposed research and the statement of agreement with terms of use of the Exercise Benefits/Barriers Scale. You have our permission to use the instrument in your research.

Best wishes with your study. We will look forward to a report of the results.

Sincerely,

Karen R. Sechrist

Karen R. Sechrist, PhD, RN
Director
Cardiac Rehabilitation Project

Northern Illinois University
DeKalb, Illinois 60115-2854

Health Promotion Research Program
Social Science Research Institute
Ambulatory Cancer Clients Project
Cardiac Rehabilitation Project
Corporate Project
Older Adults Project
(815) 753-9670

November 14, 1989

Diane Cave
5964 Shawcroft Drive
San Jose, CA 95123

Dear Ms. Cave:

You have permission to use the 48-item Health-Promoting Lifestyle Profile in your study of the relationships among perceived benefits of exercise, perceived barriers to exercise and exercise among well elderly. You may have copies made from the form that I sent previously. The instrument must be administered in its entirety, content should not be altered in any way and the copyright/permission statement at the end must be reproduced.

I would appreciate receiving a complete report of your study for our files. We are particularly interested in information about scores (range, mean and standard deviation) on the Lifestyle Profile, reliability coefficients and correlations with other measured variables.

Best wishes with your thesis.

Sincerely,

Susan Noble Walker, Ed.D., R.N.
Associate Professor and
Co-Director, Health Promotion Research Program

Demographic Data

Age: 60-70 _____
70-80 _____
80-90 _____
over 90 _____

Male _____
Female _____

Currently married _____
Never married _____
Widowed _____
Separated _____
Divorced _____

Ethnicity:

Caucasian_____
Hispanic_____
Black_____
Asian_____
Other_____

Education:
College graduate _____
Some college _____
High School Graduate _____
Some High School _____
Less than High School _____

Income:
$50,000 or above _____
$45,000-$50,000 _____
$40,000-$45,000 _____
$35,000-$40,000 _____
$30,000-$35,000 _____
$25,000-$30,000 _____
$20,000-$25,000 _____
below $20,000 _____

Do you exercise regularly? _____
If so, how many times per week? _____

APPENDIX B

Data Collection Forms

Appendix B

Lifestyle Profile

2 pages

Exercise Benefits/Barrier Scale

2 pages